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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,705	09/26/2003	Kenneth C. Gross	SUN-P8596-EKL	9255

57960 7590 01/10/2007  
SUN MICROSYSTEMS INC.  
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DAVIS, CA 95618-7759

EXAMINER
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ODOM, CURTIS B

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/10/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/671,705	<b>Applicant(s)</b> GROSS ET AL.	
	<b>Examiner</b> Curtis B. Odom	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 9, 10, 13-15, 21, 22, 25-27, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schenkel et al. (U. S. Patent No. 6, 046, 988) in view of Sachs et al. (U. S. Patent No. 6, 906, 320).

Regarding claim 1, Schenkel discloses a method for aligning (see column 13, lines 3-10) a first signal (a) to optimize correlation with a second signal (b), the method comprising:

receiving a set of signals (traffic sequences) including the first signal and the second signal (see column 8, lines 40-54);

performing a time-alignment adjustment (see column 8, lines 51-64 and column 13, lines 6-10) to the second signal to adjust a relative alignment between the first signal and the second signal;

determining (see column 2, lines 31-34 and column 13, lines 17-21) a correlation (comparison) between the first signal and the second signal with the alignment adjustment;

Schenkel does not disclose determining a correlation between the first signal and the second signal; determining if the correlation is greater with the alignment adjustment; and if the

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correlation is greater with the alignment adjustment, adjusting the alignment of the second signal.

Sachs discloses a method of analyzing data which performs correlation between two sets of data, wherein the second data is time-shifted to align the sets of data (see column 23, lines 19-28). If the time shift yields a significantly higher correlation than exists between unshifted data sets, then the correlation is performed for after shifting the data to yield the highest correlation (see column 11, lines 26-33 and column 23, lines 36-41). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the alignment of Schenkel with the teachings of Sachs since Sachs states selecting the appropriate time-shifts can speed the computation of correlation and generate high correlation values (see column 11, lines 12-33).

Regarding claim 2, Schenkel discloses combining the first and second signal through comparison (chi-squaring), see column 16, lines 1-33.

Regarding claim 3, Schenkel discloses the first and second signals contain a combination of measurements aligned using interpolation and extrapolation to optimize the correlation (comparison), see column 8, line 40-column 9, line 9.

Regarding claim 9, Schenkel discloses discarding (extracting) a signal completely correlated (with a correlation value of 1.000) with another signal in the combination of signals (see column 16, lines 51-56).

Regarding claim 10, Schenkel discloses interpolation to ensure each signal is time-aligned (same number of points) for the comparison (see column 8, line 51-column 9, line 16), wherein as shown in column 9, lines 10-16, each signal has the same number of L points.

Regarding claims 13-15, 21, and 22 Schenkel discloses the limitations of claims 13-15, 21, and 22 (see rejection of claims 1-3, 9, and 10) wherein the method of claims 1-3, 9, and 10 can be implemented as combined hardware and software (see column 18, lines 55-58).

Regarding claims 25-27, 33, and 34, the claimed apparatus includes features corresponding to the above rejection of claims 1-3, 9, and 10, which is applicable hereto.

3. Claims 4, 5, 16, 17, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schenkel et al. (U. S. Patent No. 6, 046, 988) in view of Sachs et al. (U. S. Patent No. 6, 906, 320) as applied to claims 3, 15, 27, and in further view of Abercrombie (US 2003/0208286).

Regarding claims 4, 5, 16, 17, 28, and 29, Sachs discloses re-optimizing correlation of signals by choosing time-shifts which yield the highest correlation (see column 11, lines 26-32). It would have been obvious to include this feature since Sachs states selecting the appropriate time-shifts can speed the computation of correlation. However, Schenkel and Sachs do not disclose removing a signal from the combination of signals that has the lowest correlation in the combination of signals.

However, Abercrombie discloses that the most statistically significant signal may in fact not be the most important (see section 0056). Abercrombie further discloses removing signals with lower statistical correlation from a group of signals and re-evaluating all signal free from their influence (see section 0056). Therefore, it would have been obvious to one-skilled in the art at the time the invention was made to remove the lower correlation values in Schenkel and Sachs as disclosed by Abercrombie to generate signals which are most likely the true result of the calculation (see section 0055).

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4. Claims 6-8, 18-20, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schenkel et al. (U. S. Patent No. 6, 046, 988) in view of Sachs et al. (U. S. Patent No. 6, 906, 320) as applied to claims 3, 15, 27, and in further view of Lam et al. (U. S. Patent No. 2005, 0252884).

Regarding claims 6-8, 18-20, and 30-32, Schenkel et al. and Sachs et al. do not disclose predicting an individual signal in the combination of signals by using a correlation of the individual signal with other signals in the combination of signals to predict the individual signal; measuring the individual signal; comparing the measured individual signal with the predicted individual signal; and determining that the individual signal is faulty if the measured individual signal does not substantially match the predicted individual signal, wherein a failure of a component within a computer system is predicted when a signal generated by the component is determined to be faulty.

However, Lam discloses determining a fault condition of a processing system (see Abstract) which comprises generating a correlation matrix from two data signals (see sections 0058-0060), creating prediction data from the correlation matrix (see section 0080), comparing the prediction data with target (measured) performance data (see section 0080), determining a fault condition (of a processing system) if the comparison exceeds a threshold (see section 0080). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the method/device of Schenkel et al. and Sachs to detect a fault as disclosed by Lam to allow robust determination and prediction of process faults (see section 0079).

5. Claims 11, 12, 23, 24, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schenkel et al. (U. S. Patent No. 6, 046, 988) in view of Sachs et al. (U. S.

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Patent No. 6, 906, 320) as applied to claims 1, 13, and 25, and in further view of Kjeldsen et al. (US 2003/0231714).

Regarding claims 11, 12, 23, 24, 35, and 36, Schenkel and Sachs do not disclose determining the correlation between the first signal and the second signal involves correlating a window of data points from the first signal with a window of data points from the second signal; and wherein the process of adjusting the alignment involves sliding the window along the second signal, until correlation is maximized with the window for the first signal, wherein the size of the window is adjusted.

However, Kjeldsen et al. discloses a sliding correlator (see section 0016) is used to conduct a search for a ML timing parameter, using trial time shift values that correspond to receiver sample clock increments. The observation window size of the sliding correlator can be set to a variable number of WPM pulses. The correlation output value will be greatest when the window(s) is optimally aligned between the matched filter output sample stream and the reconstituted transmit signal. Therefore, it would have been obvious to implement a sliding correlator in Schenkel and Sachs as disclosed by Kjeldsen to locate the greatest correlation value.

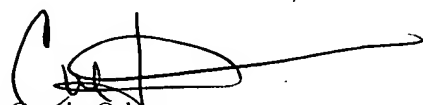
### *Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Curtis Odom', with a long horizontal stroke extending to the right.

Curtis Odom  
January 8, 2007